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Extracts of a Letter from Captain Toynbee to Admiral Smyth.

Dated at Sea (Lat. 11° 29′·5, Long. 83° 46′ E.), May 12, 1854.

"Early in March I commenced a series of ✱ — ☾ lunars, knowing that many sailors prefer these to ⊙ — ☾ lunars. I wish to show that they are equally useful for rating chronometers. Early in April we were in Table Bay and took no lunars, so that I had to wait until early in May. The observations have been taken between the hours of six and eight P.M., that time suiting me best: the altitudes and distances are all taken by myself, having an officer to note the time by the chronometer. I shall commence by giving you the result of a mistake I made. By an oversight, not having taken ✱ — ☾ lunars before, I confounded the correction for ⊙'s parallax with the third correction for refraction, and omitted to apply this third correction to my first series of lunars. I proceed to give you the errors of a chronometer for Greenwich time, found before the third correction was applied to the lunar distances, and then those errors deduced after the distances had been corrected. The remarkable fact is, that the means of these errors agree, so that I had a correct result before the third correction was applied, which in some cases amounted to nearly two miles of distance.

						Third Correction.			
						Not applied.		Applied.	
			°			m	s	m	s
Mar. 6,	Regulus	E. ☽	71	made Dent 1759	fast of Gr. M.T.	13	0	16	4·5
7,	—		59	—	—	14	7·5	16	51·5
8,	Aldebaran	W. ☽	34	—	—	14	47	12	56
	Regulus	E. ☽	47	—	—	13	50	15	49·5
9,	♄	W. ☽	56½	—	—	15	6	12	42·5
	♂	E. ☽	40¾	—	—	13	18·8	16	17·3
10,	♄	W. ☽	68¾	—	—	15	51·3	12	57·3
	♂	E. ☽	28	—	—	13	0·8	15	40·3
11,	♄	W. ☽	81	—	—	16	56·5	13	38
	Aldebaran	W. ☽	70½	—	—	16	33·8	13	38·8
10) 89						10) 46	31·7	46	35·7
9th March				—	—	14	39·2	14	39·6

"This is a remarkable proof of the advantage derived from combining an equal number of east and west lunars; and I think it proves that any constant error in observer or instrument would be destroyed. This month (May) I obtained eighteen sets, nine east and nine west of moon: their mean gave, May 6, chronometer fast of Greenwich 22^{m} 38^{s}·2; and fifty-eight days having elapsed, I have a rate of 8^{s}·3 gaining daily. Now I find, that had I only taken the two sets on the 9th of March, and the two sets on the 6th of May, I should have had the same rate, and an original error only 11^{s} less than that by the mean of all the observations."

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In a subsequent part of his letter, Captain Toynbee makes the following remark:—"I should like to see the apparent time of the principal stars passing the meridian entered in the *Nautical Almanac.* I am aware this may be found by the difference of their right ascension from that of the sun, but this is not generally known amongst sailors. Besides, the sailor wants, by reference to the table, to find what stars will pass the meridian at such and such a time, but he may have to subtract the sun's right ascension from many stars before he finds the right one."

The planet discovered by Mr. Hind on the 22d of July has been called *Urania,* at the suggestion of Professor De Morgan, who had been invited by Mr. Bishop to select a name for the stranger.

Elements of Urania. By Dr. Oudemans.

Epoch, July 22·0, M. T. Greenwich.

	° ′ ″		
M	298 13 17·4		
π	26 42 59·3	Mean Equinox, 1854, Jan. 1	
☊	307 57 51·15		
i	1 56 41·7		
φ	8 54 39·2	log e	9·190046
μ	979·715	log a	0·372604

Observations employed in calculating the foregoing elements:—

	Greenwich M.T. h m s	App. R.A. ° ′ ″	App. Decl. ° ′ ″
July 22	12 56 21	317 27 14·1	−16 20 40·6
	Leyden M.T.		
Aug. 12	10 47 19	312 20 31·5	−17 21 46·5
Sept. 5	9 23 33	307 46 54·7	−18 6 12·3

The first observation is the mean of three positions taken by Mr. Hind on the night of the discovery of the planet. All the corrections are taken into account. The system of elements is considered by Dr. Oudemans to be very uncertain, since the planet, during the interval comprised between the 22d of July and the 5th of September, had described nearly a great circle.

Discovery of a New Comet (Comet IV. 1854). By M. Bruhns.

On the evening of the 12th of September, a new comet was discovered by M. Bruhns, at the Observatory of Berlin, between

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